

29768

S/194/61/000/006/051/077
D201/D302

Apparatus for acting...

valve generator and is extinguished by means of a diode. An automatic security arrangement is considered. A is mounted on a mobile frame and has a control panel. The circuit and a photograph of A are given. [Abstracter's note: Complete translation.]

*Vsesoyuznyy Nauchno-issledovatel'skiy institut
meditsinskikh instrumentov i oborudovaniya*

Card 2/2

LIVENSON, A.R.

Use of microwaves in physical therapy ("Iuch-58" apparatus).
Med. prom. 14 no.5:57-63 My '60; (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo
instrumentariya i oborudovaniya.
(MICROWAVES--THERAPEUTIC USE)
(PHYSICAL THERAPY)

S/275/63/000/002/015/032
D405/D301

AUTHOR: Livenson, A.R.

TITLE: High-frequency physio-therapeutic equipment in the GDR (East Germany)

PERIODICAL: Referativnyy zhurnal, Elektronika i ee primeneniye, no. 2, 1963, 9, abstract 2V47 (Novosti med. tekhn., no. 1, 1962, 94-105)

TEXT: The plant TuR produces the stationary apparatus KW-3/2 (300 watt) for UHF - therapy, as well as its more advanced model KW-4 (400 watt). The oscillation frequency is $27.12 \text{ Mc} \pm 0.6\%$. An original automatic system effects the resonance tuning of the therapeutic circuit. A number of measures were taken for suppressing the harmonics of the fundamental frequency of the oscillator. The apparatuses are equipped with tuning indicators of the therapeutic circuit and with output-power meters. The treatment clocks with which the apparatus KW-4 is equipped, switch off automatically the output voltage when the treatment is finished. The devices are

Card 1/3

High-frequency physio-therapeutic ...

S/275/63/000/002/015/032
D405/D301

easy to handle and can be manufactured by a technological process; their outward look is aesthetic. For measuring the output power of the UHF - therapy devices, an equivalent (phantom) load was developed in the plant's laboratory. The plant produces in series an electrode which provides for the action of a high-frequency magnetic field on muscular tissue. The special feature of the electrode is the connecting of the middle point of the coil with the common point of the two circuits that ensures minimum action of the electric field-component on the tissue and optimum matching of the electrode with the oscillator output. The apparatuses US2-2 and US-5 for ultrasonic therapy have a maximum power of 40 and 20 watt respectively in the ultrasonic head, and operate at a frequency of 800 kc. The transducers are barium titanate plates of 70% efficiency. The apparatus US-5 is equipped with a light indicator of the ultrasonic contact and with an automatic switch-off system for the vibrator when the head output is < 50% of the ultrasonic power; this prevents overheating of the head. Pulsed operating conditions of the vibrator with external triggering are provided for. The apparatus is equipped with treatment clocks. Ultrasonic balances

Card 2/3

High-frequency physio-therapeutic ...

S/275/63/000/002/015/032
D405/D301

are produced which operate by a compensation circuit. In the frequency range of 200-3000 kc the limits of variation of the ultrasonic-oscillation power are 0.2-60 watt. The apparatus RS-2 for electro-diagnosis and electro-therapy by a low-frequency pulse current, permits obtaining a galvanic current of up to 60 mA and a pulse current with a frequency from a few pulses up to 2 kc and a pulse duration of 0.03 milliseconds to 3 seconds; the pulse-front length can be regulated. Pulse modulation by a voltage with a frequency of 15-50 periods per minute is provided for. The apparatus RS-7 is more limited in scope and designed for wide clinical practice. The standards and methods of radio-noise measurement, adopted in East Germany, are listed; these are basically similar to the standards and methods adopted in most European countries.

[Abstracter's note: Complete translation]

Card 3/3

LIVENSON, A.R.

Dosimetric methods in the therapeutic use of the electromagnetic
field of centimeter and decimeter waves. Trudy VNIIMIO no.3:
12-21 '63 (MIRA 18:2)

BELOUSOV, B. Ye.; LIVENSON, A.R.

Exhibition of electronic medical equipment at the 5th International Conference of Medical Electronics. Trudy VNIIMIO no.3:87-100
'63 (MIRA 18:2)

LIVENSON, A.R.

Measurement of the complex dielectrical permeability of some biological tissues in the range of decimeter and centimeter waves. Nov. med. tekhn. no.2:16-23 '64.

(MIRA 18:11)

L 15120-65 EEC-4/EEC(k)-2/EN(d) Pg-4/Pk-4/P1-4/Po-4/Pq-4 AMD
 ACCESSION NR: APL042900 8/0243/64/000/007/0010/0017

AUTHOR: Livenson, A. R.

TITLE: Electric parameters of biological tissues in the microwave range; report II. Methods of measuring electric parameters of biological tissues

SOURCE: Meditsinskaya promyshlennost' SSSR, no. 7, 1964, 10-17

TOPIC TAGS: tissue, electric parameter, dielectric parameter, measurement, microwave range, coaxial transmission line

ABSTRACT: A simplified method of measuring dielectric parameters of biological tissues in a microwave range is described based on the use of a coaxial transmission line. On the basis of the external field distribution of a tissue, the coefficient of the travelling wave is determined on the coaxial measuring line. By probing the same line in the tissue itself, the amplitude distribution of the electric field vector is determined. With determination of these values, the dielectric parameters can be found. Dielectric parameters of ground muscle tissues were measured at frequencies of 460 and 2375 mc and

Card 1/2

L 15120-65

ACCESSION NR: AF4042900

the measuring setup is described. Measurement errors for the 460 mc frequency did not exceed 5%, and for the 2375 mc frequency they did not exceed 2.3%. Dielectric parameters of biological tissues with a high water content can be measured quickly and accurately in the microwave range without special equipment. "The author expresses his gratitude to B. Yu. Korel'shteyn for assistance in conducting the measurements." Orig. art. has: 3 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh instrumentov i oborudovaniya, Moscow (All-Union Scientific-Research Institute of Medical Instruments and Equipment)

SUBMITTED: 10Mar64

ENCL: 00

SUB CODE: LS, EC

NR REF SOV: 004

OTHER: 006

Card 2/2

LIVENTSEV, Nikolay Mitrofanovich; LIVINSON, A.R., red.

[Electrical medical apparatus; principles of the function,
structure and operation] Elektromeditsinskaja apparatura;
printsip deistviia, ustroistvo, ekspluatatsiia. Izd.3.,
dop. 1 perer. Moskva, Meditsina, 1964. 334 p.
(MIRA 18:2)

PAVLOVA, N.I.; LIVENSON, A.R.

Electron paramagnetic resonance spectra of the human blood
under normal conditions and in leucoses. Biofizika 10 no.1:
169-171 '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo
instrumenta i oborudovaniya, Moskva.

LIVENSON, A.R.

Some characteristics of the biophysical action of the electric-
magnetic field of centimeter and decimeter waves. Vopr. kur.
fizioter. i lech. fiz. kul't 30 no.5:434-441 3.0 '45.

(MIPA 14401)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh
instrumentov i oborudovaniya (dir. I.P.Smirnov), Moskva.

L 23084-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6008026

SOURCE CODE: UR/0243/66/000/002/0060/0062

AUTHOR: Livenson, A. R.; Korel'shteyn, B. Yu.

47
B

ORG: All-Union Scientific Research Institute of Medical Instruments and Equipment,
Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh instrumentov
i oborudovaniya)

TITLE: Power divider for the "Luch-58" microwave therapy unit

SOURCE: Meditsinskaya promyshlennost' SSSR, no. 2, 1966, 60-62

TOPIC TAGS: microwave technology, power divider, waveguide

ABSTRACT: The authors describe the newly designed ¹⁰DM-1 power divider developed at the All-Union Scientific Research Institute of Medical Instruments and Equipment for reducing the power fed to the radiator in the "Luch-58" unit by factors of 10 and 50. The power divider (see Fig. 1) consists of a cylindrical waveguide 1 excited by pin 2 which is the end of coaxial cable 3 in the unit. The load placed in the waveguide is a three-liter glass vessel 4 filled with tap water. The vessel is placed on a support 5 made from a high frequency dielectric (polystyrene foam plastic) 15. Pins 6 and 7 enter the waveguide through openings in the support to lead off a portion of the power for feeding the radiators. The radiators are connected to the pins by a flexible coaxial cable through sockets 8 and 9. The lengths of these pins are cho-

2

Card 1/2

UDC: 815.846 : 621.385.6] : 615.471

L 23084-66
ACC NR: AP6008026

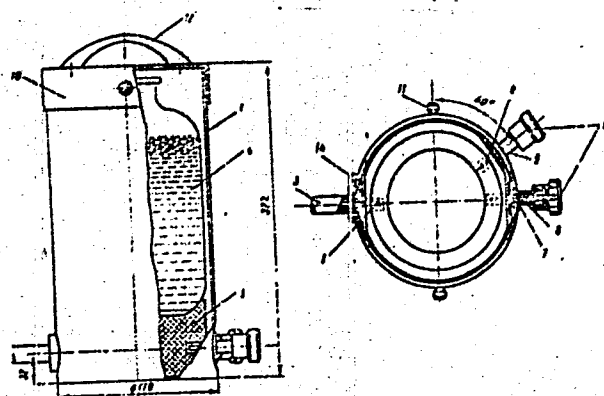


Fig. 1. Power divider.

sen in such a way that 1/10 of the power fed to the divider is taken off from socket 8 while plug 9 leads off 1/50 of the power. The waveguide is closed at the top by cover 10 which is fastened by nuts 11. The portable divider is carried by handle 12 in the cover. The unused power lead is protected by cover 13. Measurements show that the division factor for the 1:10 socket varies by $\pm 10\%$ in the working range, while that for the 1:50 socket varies by $+20, -10\%$. Clinical tests conducted at the Central Scientific Research Institute of Natural Medicinal Factors and Physiotherapy showed that the DM-1 divider considerably increases the utility of the "Luch-58" unit. Orig. art. has: 1 figure. [14]

SUB CODE: 09/ SUBM DATE: 27Oct65/ ORIG REF: 002/ ATD PRESS: 4234
Card: 2/2 DCR

LIVENTSOV, A.V.; MARKOV, M.N.; MERSON, Ya.I.; SHAMILEV, M.R.

Experimental determination of the radiation leaving the earth.
Dokl. AN SSSR 146 no.2:344-346 S '62. (MIRA 15:9)

1. Predstavleno akademikom A.A. Blagonravovym.
(Atmosphere, Upper--Rocket observations)

LIVENTAL, V. E.

"Fossil Remains of Calcareous Algae in the Pliocene of
Azerbaijan," Dok. AN, 51, No. 2, 1946. cl945-.

COMMON ELEMENTS																										COMMON METALS																										COMMON NON-METALS																										COMMON GASES																										COMMON LIQUIDS																										COMMON SOLIDS																									
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CA 22 Fixation of sands in areas adjacent to an oil well. K. Il'yental. U.S.S.R. 08,033, June 30, 1947. Into the sand layer is first pumped a soln. of Ca(OH)₂, which wets the sand grains. Next is pumped a liquid non-miscible with the aq. soln., e.g., benzine, and then an aq. soln. of a carbonate is pumped into the sand. The carbonate combines with the Ca, thereby cementing the sand grains and yet leaves the layer sufficiently porous to drain the oil. M. Hosh																																																																																																																																																											
ASB-51A METALLURGICAL LITERATURE CLASSIFICATION 1947-1948 1947-1948 1947-1948																																																																																																																																																											

LIVENTHAL V. E.

PA 26/49T56

USSR/Geology
Stratification
Tectonics

Jan 49

"The Paleogenic Method of Stratigraphic Separation
of Deposits," V. E. Livental', 2 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 1

Principle of method consists of selecting a representative mineral fauna and composing a table, plotting its phylogenesis against its ontogenesis for several layers, which more or less uniformly characterize the entire stratum according to time of their development. Submitted 11 Sep 48.

26/49T56

1. LIVENTAL', V. Ye.
2. USSR (600)
4. Mortality
7. Practical meaning of the mortality curve in the study of fossils. Dokl. AN SSSR. 87, no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

LIVENTAL', V.E.

Data on paleontological characteristics of Buliminidae in Miocene deposits of the Carpathian Mountain region. Trudy L'vov.geol.ob-
va no.2:158-197 '53.
(MLRA 10:4)

1. L'vov. Ob'yedineniye Ukrneft'.
(Carpathian Mountain region--Foraminifera, Fossil)

LIVENTALS, A.

6557. Electrocardiographic changes in clinical hypertension. A. Liventals *Zin. vaksia i razums Rigzinsk. Inst.*, 1954, 3, 209-217; *Referat. Zh. Biol.*, 1956, Abstr. No. 73910. — In 42 patients with clinical hypertension there were found: slowing of sinus rhythm, 8 cases, shortening of PQ interval, 10 cases, shortening of QRS interval, 8 cases, shortening of QRST, 8 cases, raising of T wave, 8 cases, raising of ST wave, 8 cases. The changes in e.c.g. were found in the early stages of this disease when other changes in the heart could not be detected—hence early hospitalisation based on e.c.g. facilitates treatment. (Russian) T. R. PARSONS

KURDYUMOV, O.I., inzh.; CHOPOROVA, R.I.; Prinimali uchastiye: AZRILYANT,
Ye.A.; BOGANSKIY, G.I.; SMIRNOV, L.F.; PRAVDA, A.I.; LIVENTSEV, A.V.

Design and use of vibration-proof foundations for forging
hammers. [Nauch. trudy] ENIKMASHa 11:63-77 '65.
(MIRA 18:6)

INVENTSEV, F.I., Cand Tech Sci—(disc) "~~Increasing~~ ^{units} the efficiency of
diesel ~~installations~~ ^{with} by means of high-temperature cooling ~~with~~ ^{with refraction}
~~of steam.~~ ^{of steam.}" Len, 1958. 13 pp (Min of Higher Education USSR.
~~separation of vapor.~~)
Len Polytechnic Inst in L.I. Kalinin, 150 copies (EL, 49-52, 124)

- 53 -

LIVENTSEV, F.L.

Increasing the efficiency of Diesel engines by using high-
temperature cooling with take-off of steam. Trudy LPI no.193:
168-179 '58. (MIRA 12:2)

(Diesel engines--Cooling)

MEL'NIKOV, G.V.; LIVENTSEV, F.L.; PETROV, V.M.; KOSTIN, A.K.

High-temperature cooling of the LOGK-1 gas motor compressor.
Trudy LPI no.221:153-165 '62. (MIRA 15:9)
(Compressors—Cooling) (Gas, Natural—Transportation)

KOSTIN, A.K., kand. tekhn. nauk, dotsent; LIVENTSEV, F.L., kand. tekhn. nauk,
dotsent; MEL'NIKOV, G.V., kand. tekhn. nauk, dotsent

Heat stress of the LOGK-1 gas motor compressor with evaporation cooling.
Energomashinostroenie 11 no.6:20-22 Je '65. (MIRA 18:7)

LIVENTSEV, F.L., kand.tekhn.nauk, dotsent

High-temperature cooling of piston-type internal combustion engines.
Energomashinostroenie 9 no.12:15-18 D '63. (MIRA 17:1)

LIVENISEV, F.L.; GRIBANOV, V.I., kand. tekhn. nauk, retsenzent

[High-temperature cooling of piston-type internal combustion engines] Vysokotemperaturnoe okhlazhdenie porshnevnykh dvigatelei vnutrennego sgoraniia. Moskva, Mashinostroenie, 1964. 191 p. (MIRA 17:9)

GORODETSKIY, V.I., inzh.; ZYBIN, P.M., inzh.; ISAKOV, Yu.N., inzh.;
D'YACHENKO, N.Kh., doktor tekhn.nauk, prof.; LIVENTSEV, F.L.,
kand.tekhn.nauk, dotsent; MEL'NIKOV, G.V., kand.tekhn.nauk,
dotsent

A new gas pipe line compressor station with evaporation cooling of
the gas motor compressors. Energomashinostroenie 10 no.1:27-29
Ja '64. (MIRA 17:4)

LIVENTSEV, I.I., kand.pedagog.nauk

Independent work with books in the biology class. Biol. v
shkole no. 6:36-38 H-D '60. (MIRA 14'1)

1. Gorno-Altayskiy pedagogicheskiy institut.
(Biology--Study and teaching)

LIVENTSEV, I.I.

Demonstrating the infusoria in zoology classes. Biol. v shkole no.1:
84 Ja-F '62. (MIRA 15:1)

1. Volgogradskiy pedagogicheskiy institut.
(INFUSORIA)

ANISTINOV, L. A., LIVENTSEV, L., BERNARD, F. K.

Bee Culture

Bee colonies with several queens Pchelovodstvo 29, no. 4, April 1952

9. Monthly List of Russian Accessions, Library of Congress, August ²195~~3~~, Uncl.

LIVENTSEV, N. M.

PA 16T56

USSR/Medicine - Diathermy
Electromagnetic waves

Jul 1947

"A New Method of Short Wave Diathermy," N. M.
Liventsev, 6 pp

"Gospital Delo" No 7

Experiments carried out at the Physical Technical
Dept, headed by A. N. Obrosoy, of the State
Scientific and Research Institute of Physiotherapy,
directed by A. I. Nesterov. This new method consists
of the use of the energy operated by vibrations of
high frequencies creating magnetic fields. This
energy pierces the tissue of the organs and creates
heat within the organ.

16T56

LIVENTSEV, N. M.

USSR/Medicine - Electricity
Medicina - Sleep

Jun 48

"The Problem of Sleep, Narcosis and Let argy Induced by Electricity," Prof V. A. Gilyarovskiy, Prof I. P. Sluchevskiy, N. M. Liventsov, E. A. Kirillova, Inst Psychiatry, Acad Med Sci, 5 3/4 pp

"Klin Med" Vol XXVI, No 6

Describes induction of narcosis and lethargy in dogs and human beings by alternating currents. Given details of surgical operations performed under such conditions.

PA 14/49758

LIVENTSEV, N.M.

~~SECRET~~
Mechanism of narcotic and hyperkinetic reactions in electro-narcosis.
Fiziol. zh. SSSR 37 no.6:703-712 Nov-Dec 51. (CIAM 21:4)

1. Institute of Psychiatry, Ministry of Public Health USSR.

Liventsh, N.M.
LIVENTSHV, N.M.

Electronarcosis in supra-maximal dosage of electric current. Fiziol.
zh, SSSR 38 no.1:39-45 Jan-Feb 52. (GIML 21:5)

1. Institute of Psychiatry, Ministry of Public Health, Moscow.

LIVENTSEV, N.M.

OBROSOV, A.N., professor; LIVENTSEV, N.M., kandidat meditsinskikh nauk;
MANIKOV, M.Ye., redaktor; KARTSEVA, K.K., tekhnicheskiiy redaktor

[Electrodiagnosis and electric stimulation of muscles in diseases
of the peripheral nerves; new methods and apparatus] Elektro-
diagnostika i elektrostimulatsiya myshts pri porazhenii perife-
richeskikh nervov; novye metodiki i apparaty. Moskva, Gos. izd-vo
med. lit-ry, 1953. 93 p. [Microfilm] (MLRA 7:10)

(Nervous system--Diseases)

(Electrodiagnosis)

(Electrotherapeutics)

GILYAROVSKIY, Vasilii Alekseyevich, 1875- ; LIVENTSEV, N.M.; SEGAL', Yu.E.;
KIRILLOVA, Z.A.

[Electric sleep; clinical and physiological study] Elektrosn; kliniko-
fiziologicheskoe issledovanie. Moskva, Medgiz, 1953. 125 p. (MLBA 6:11)
(Electrotherapeutics) (Sleep)

OBROSOV, A.N., professor; LIVENTSEV, N.M.; NESTEROV, A.I., deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR, zasluzhennyy deyatel' nauki, professor, direktor.

Soviet classification and nomenclature of electrotherapeutic measures and apparatus should be brought up to date. Sov.med. 17 no.5:35-37 My '53.
(MLRA 6:6)

1. Akademiya meditsinskikh nauk SSSR (for Nesterov). institut fizioterapii.
2. Gosudarstvennyy (Electrotherapeutics)

LIVINTSEV, N.M.

Mechanism of various phases of electronarcosis according to the Pavlovian theory. *Fiziol. zh. SSSR* 39 no.2:153-158 Mar-Apr 1953. (CLML 24:3)

1. Institute of Psychiatry of the Ministry of Public Health USSR, Moscow.

LIVENTSEV, N.M.

LIVENTSEV, N.M.; VOZDVIZHNSKAYA, V.S.; STRELKOVA, A.F.

Treatment with impulsive current (electronarcosis) of sequelae of traumatic injuries of the brain. Zhur.nevr.i psikh. 54 no.4:328-335 Ap '54. (MLRA 7:5)

1. Nevrologicheskoye otdeleniye kliniki Nauchno-issledovatel'skogo instituta fizioterapii Ministerstva zdavookhraneniya RSFSR.

(BRAIN, wounds and injuries,

*sequelae, ther., electronarcosis)

(WOUNDS AND INJURIES,

*brain, sequelae, ther., electronarcosis)

(ELECTRONARCOSIS, in various diseases,

*sequelae of brain inj.)

LIVENTSEV, Nikolay Mitrofanovich, doktor meditsinskikh nauk, kandidat
tekhnicheskikh nauk; KOLOSOV, A.A., redaktor; POPRYADUKHIN, K.A.
tekhnicheskiiy redaktor.

[Electrical medical (physiotherapeutic) equipment; installation,
operation and maintenance] Elektromeditsinskaia (fizioterapevti-
cheskaia) appratura (ustroistvo, ekspluatatsiia i remont);
rukovodstvo dlia fiziotekhnikov. Moskva, Gos.izd-vo meditsinskoi
lit-ry, 1955. 325 p. (MLRA 8:10)

(ELECTROTHERAPEUTICS--APPARATUS AND INSTRUMENTS)

LIVENTSEV, N.M.

Application of impulse currents in physiotherapy. Med.prom. no.2:6-9
Ap-Je '55. (MIRA 9:12)

1. Institut fizioterapii Ministerstva zdravookhraneniya RSFSR
(ELECTROTHERAPY,
impulse current)

LIVENTSEV, N.M.; ABRIKOSOV, I.A.; SPICHENKOV, M.N.

Construction of an apparatus for local d'arsonvalization with an
electron-tube circuit. Med.prom. no.3:31-35 J1-S '55. (MLRA 9:12)

1. Institut fizioterapii Ministerstva zdavookhraneniya RSFSR.
(ELECTROTHERAPY, apparatus and instruments,
for local d'arsonvalization with electronic lamp)

LIVENTSOV, N.M.

Biophysics and its place in medical education. Biofizika 2 no.4:
536-539 '57. (MLRA 10:9)

1. Pervyy Moskovskiy ordena Lenina meditsinskiy institut im.
I.M.Sechenova
(BIOPHYSICS) (MEDICINE--STUDY AND TEACHING)

OBROSOV, A.N., prof.; LIVENTSEV, N.M., prof.

"Physics and its application in biology and medicine" [in German]
by W.Beyer, E.Dörner. Reviewed by A.N.Obrosoy, N.M.Liventsev.
Vop.kur.fizioter. i lech.fiz.kul't. 22 no.6:81-84 N-D '57.

(MIRA 11:2)

1. Gosudarstvennyy institut fizioterapii (for Obrosoy). 2.
Kafedra fiziki I Moskovskogo ordena Lenina meditsinskogo instituta
imeni I.M.Sechenova (for Liventsev)
(PHYSICS) (BEYER, W.) (DORNER, E.)

LIVENTSEV, N.M.

LIVENTSEV, N.M., prof.

Physics in medicine. Zdorov'e 4 no.2:1-3 P '58.
(PHYSICAL THERAPY)

(MIRA 11:2)

LIVENTSEV, N.M., prof.

Achievements of physics in the field of public health. Sov.zdrav.
17 no.12:15-19 D '58. (MIRA 12:2)

1. Iz I Moskovskogo ordena Lenina meditsinskogo instituta imeni
I.M. Sechenova.

(PHYSICS

physicist's contribution to pub. health

(PUBLIC HEALTH

contribution of physicists

LIVENTSEV, N.M.
ARTSYBYSHEV, N.A.; BELOGORSKAYA, N.I.; VINOGRADOVA, L.Yu.; GALANIN, D.D.;
GUR'YEVA, V.V.; ZVORYKIN, B.S.; ZORZ, V.A.; LIVENTSEV, N.M.;
MENSHUTIN, H.F.; MINCHENKOV, Ye.Ya.; POKROVSKIY, A.A.; REZNIKOV, L.I.;
SAKHAROV, D.I.; TIKHONOVA, Z.I.; KHLEBODAROV, S.F.; SHEYMAN, M.I.;
YUS'KOVICH, V.F.

Professor S.A. Artsybyshhev; obituary. Fiz. v shkole 18 no.1:95-96
Ja-F '58. (MIRA 11:1)
(Artsybyshhev, Sergei Aleksandrovich, 1887-1957)

LIVENTSEV, Nikolay Mitrofanovich; ABRIKOSOV, Ivan Alekseyevich; KIRILLOVA,
Zinaida Alekseyevna; AVERBAKH, M.M., red.; POPRYADUKHIN, K.A.,
tekhn. red.

[Electricity in the service of health; treatment by light and
electricity] Elektrichestvo na sluzhbe zdorov'ia; o lechenii
svetom i elektrichestvom. Moskva, Gos. izd-vo med. lit-ry, 1956.
59 p.

(ELECTROTHERAPEUTICS)

(MIRA 11:7)

S/003/60/000/002/001/002
B023/B056

AUTHOR: Liventsev, N. M., Professor

TITLE: Future Physicians to Receive an Extensive Biophysical Training

PERIODICAL: Vestnik vysshey shkoly, 1960, No. 2, pp. 30 - 33

TEXT: The great tasks to be performed by medical science in accordance with the decisions of the XXI Congress of the CPSU call for a deeper and more comprehensive development of medical science. N. S. Khrushchev pointed out that the development of biology by way of utilizing achievements of biochemistry and biophysics must be considered an essential condition for raising the level of medical science. Modern biophysics has its own problems, as has been explained by P. P. Lazarev, Academician. Its basic importance is, according to the author, to rouse and develop the dialectic-materialistic viewpoint toward the living organism in physicians, thus forming a basis for their way of thinking. On the basis of his detailed lecture, the author arrives at the conclusion that biophysics should occupy a position that is analogous to that of biochemistry

Card 1/3

Future Physicians to Receive an Extensive
Biophysical Training

S/003/60/000/002/001/002
B023/B056

or a position that might rather be termed "symmetric". In accordance with this principle and these directives, the theoretical part of the scientific plan of medical institutes must be reformed. Such a reformation requires time, and can be performed only in stages. The first on this way is intended to be the reform of courses in physics from a general educational into a special course known as "medical physics" analogous to "biological physics". This terminology is not new. Already for a long time, a branch of science has been known by that name at the Voenno-meditsinskaya akademiya imeni S. M. Kirova (Military Medical Academy imeni S. M. Kirov). The author then gives a definition of medical physics and enumerates the problems which a reorganized course should comprise: 1) Laws of mechanics; 2) molecular phenomena; 3) simple electric phenomena; 4) main phenomena connected with the nature of light waves; 5) structure of the atomic nucleus; 6) dialectic unity of corpuscular and wave properties of matter. The syllabus comprising all these subjects corresponds to 104 instruction hours as compared to 68 instruction hours of the present course of physics. The author then continues saying that it would also be to the purpose to extend the course on medical physics to two or three terms. It is further necessary to reorganize also the practical part of the course. Practical

Card 2/3

Future Physicians to Receive an Extensive
Biophysical Training

S/003/60/000/002/001/002
B023/B056

work should have the character of laboratory work. Every student ought to solve his problems independently, viz., by means of physical outfit of his own personal use. The usual two hours of laboratory work are not very effective because they permit only a superficial introduction into methods. The structure of the course described will, in future, on the one hand, allow physicians a proper insight into the nature of physiological processes, and, on the other, it will make it possible to convey a minimum of necessary knowledge in the field of diagnostics and therapeutics. This reorganization of the course of physics is intended to be only a transitional stage. In future, biophysics will occupy an independent position within the syllabus, whereas the problems of medical apparatus are to become a special branch of science. These statements were made by the author at a conference of the heads of chairs of physics of medical institutes, which had been convened by the Ministerstvo zdravookhraneniya SSSR i RSFSR (Ministry of Health USSR and RSFSR) in Moscow in October 1959. The new directives were approved by the members of the conference.

ASSOCIATION: 1-y Moskovskiy meditsinskiy institut imeni I. M. Sechenova
(First Moscow Medical Institute imeni I. M. Sechenov)

Card 3/3

LIVENTSEV, Nikolay Nitrofanovich

[Electric medical apparatus; operating principles, installation,
and use] Elektro-meditsinskaja apparatura; printsip deistviia,
ustroistvo, ekspluatatsiia. Izd.2., dop. i perer. Moskva, Medgiz,
1960. 386 p. (MIRA 13:9)

(ELECTROTHERAPEUTICS--EQUIPMENT AND SUPPLIES)

LIVENTSEV, Nikolay Mitrofanovich

[Course in physics for medical students] Kurs fiziki dlia
medikov. Moskva, Gos.izd-vo lit-ry, 1960. 514 p.

(MIRA 14:3)

(Physics)

LIVENTSEV, N.M.

"Essentials of biological and medical physics" by Ralph W. Stacy
and others. Reviewed by N.M. Liventsev. Biofizika 5 no. 4:513-
516 '60. (MIRA 13:12)

(BIOPHYSICS) (STACY, RALPH W.)

LIVENTSEV, N.M.

Regulating features of apparatus for electrotherapy and electrodiagnosis.
Vop. kur. fizioter. i lech. fiz. kul't. 25 no. 3:244-247 My-Je '60.

(MIRA 14:4)

1. Iz kafedry fiziki I Moskovskogo ordena Lenina meditsinskogo
instituta imeni I.M. Sechenova i Nauchno-issledovatel'skogo
instituta fizioterapii Ministerstva zdravookhraneniya RSFSR.
(ELECTROTHERAPEUTICS—APPARATUS AND INSTRUMENTS)

LIVENTSEV N.M.

" ELECTRODIAGNOSIS AND ELECTRICAL STIMULATION IN THE TREATMENT OF NEUROMUSCULAR DISEASES"

report to be submitted to the Planning Committee, Third Intl, Congress On Physical
Medicine, Washington, D.C. , 21-26 August 1960

Summary availble Intl. Conference File.

LIVENTSEV, N.M., prof.; GUBAREV, I.D., red.; BIRKENVAL'D, G.V.,
tekh. red.

[Special methods in microscopy; optional lecture in a course
in physics for physicians and biologists] Spetsial'nye pri-
emy mikroskopii; fakul'tativnaia leksiia po kursu fiziki
dlia medikov i biologov, Moskva, 1--i Mosk. med.in-t im. I.M.
Sechenova, 1961. 36 p. (MIRA 15:8)
(Microscopy--Technique)

LIVENTSEV, N.M., prof.; GUBAREV, I.D., red.; BIRKENVAL'D, G.V., tekhn.
red.

[Methodological textbook for the arrangement of practical work
in a physics class: Use of a dosimeter in studying X-ray
absorption by various substances] Metodicheskoe posobie dlia
postanovki i vypolneniia v fizicheskom praktikume raboty: Issle-
dovanie pogloshcheniia rentgenovskogo izlucheniia razlichnymi
veshchestvami s pomoshch'iu dozimetra. Moskva, Pervyi MOLMI,
1961. 17 p. (MIRA 15:12)

(Physics—Study and teaching) (X-ray absorption)

LIVENTSEV, N.M., prof. (Moskva); NESTEROV, V.A., dotsent (Moskva)

Electricity in medicine. Fiz. v shkole 21 no.6:17-25 N-D '61.
(MIRA 14:12)

(Medical instruments and apparatus)

LIVENTSEV, N.M., prof., (Moskva)

Light and sound measurements in physics. Fiz.v shkole 23
no.1:95-98 Ja-F '63. (MIRA 16:4)
(Optics, Physiological) (Sound-Measurement).

LIVENTSEV, Nikolay Mitrofanovich; LIVENSON, A.R., red.

[Electrical medical apparatus; principles of the function,
structure and operation] Elektromeditsinskaia apparatura;
printsip deistviia, ustroistvo, ekspluatatsiia. Izd.3.,
dop. i perer. Moskva, Meditsina, 1964. 334 p.
(MIRA 18:2)

BANSHCHIKOV, V.M., prof.; LIVENTSEV, N.M., prof.; SERGEYEV, G.V., doktor
med. nauk; KULIKOVA, Ye.I. (Lebedinskaya), kand. med. nauk

Conference of doctors of Moscow and Moscow Province on the
problem of electrosleep. Vop. kur., fizioter. i lech. fiz.
kul't. 30 no.4:375 J1-Ag '65. (MIRA 18:9)

LIVENTSEV, V., insh.

Making efforts to save money. Mast. ugl. 7 no. 4:22 Ap '58.
(Coal mines and mining—Costs) (MIRA 11:4)

PIRKOVSKIY, N. [Pirkovs'kyi, N.]; LIVENTSEV, V.

Marshes retreat. . Znan. ta pratsia no. 1:25 Ja '61.
(MIRA 14:4)

(Rovno Province--Reclamation of land)

LAVENTSEY, V.D.; IUSHNIKOV, G.A.; ZAYTSEV, G.G.; BARABANOV, V.N.; ANUFRIYEV,
Yu.P.

Investigating certain properties and the mechanism of the deformation
of graphite. Konstr. uglegraf. mat. no.1:175-189 '64. (HIRA 17:11)

1. FOR-65 EWG(j)/EWT(d)/EWP(o)/EWT(m)/EWP(w)/EPP(c)/EWP(c)/EWA(d)/EWP(v)/
 EWT(k)/EWP(b)/EWT(f)/EWP(t)/EWT(l)/EWP(h)/EWT(n)/EWP(r)/EWT(s)/EWT(u)/EWT(v)/EWT(w)/EWT(x)/EWT(y)/EWT(z)
 ACCESSION NR: AT5003516 S70007764/000/01/01/5/0189

AUTHOR: Liventsev, V. D.; Lushnikov, G. A.; Zaytsev, G. G.; Barabanov, V. N.; Anufriyev, Yu. P.

TITLE: Investigation of some of the properties of graphite¹⁵ and of its deformation mechanism

SOURCE: Konstruktsionnyye uglegrafitovyye materialy (Carbon and graphite construction materials); sbornik trudov, no. 1. Moscow, Izd-vo Metallurgiya, 1964, 175-189

TOPIC TAGS: acoustic analysis, ultrasonic inspection, nondestructive testing, graphite, tensile property, material strength

ABSTRACT: Acoustic inspection methods based on measurement of the rate of propagation of an ultrasonic signal, measurement of signal attenuation and measurement of natural frequency oscillations (resonance method) are being more and more frequently used in testing graphite finished and semifinished articles. The measurement of elastic and inelastic acoustic parameters makes it possible to determine the strength of an article without destroying it. In order to study

Card 1/4

L 58083-65

EXPRESSION NR: AT5003516

the mechanism of graphite destruction in the case of compression, the authors examined the changes in acoustic parameters (rates of propagation and attenuation of ultrasonic waves) and also investigated the effect of loading on the properties of the graphite. The experiments were conducted in a pressure chamber (type 17-18) (20-25 MPa). The ultrasonic working frequency was about 1 MHz. The time of propagation time was measured in a direction perpendicular to the direction of compression. The time for passage of the signal was measured using a V4-71 ultrasonic flaw detector. The accuracy for reading the relative change in time for passage of the signal is 0.1-0.2% if the experiment is conducted continuously and for a comparatively short duration (in this case 1-2 minutes). This error is caused chiefly by variations in the power supply voltage. The experiments which were conducted indicated that it is possible to determine the moments of origin and nature of the development of cracks in graphite in the case of both single-stage and repeated compression. During compression, graphite has considerable relative longitudinal deformations, maximum values reaching $10 \cdot 10^{-3}$ which is 3-5 times greater than the tensile deformation limits. The graphite retains considerable residual deformations after the first loading and subsequent unloading. The value of these deformations depends on the given

Card 2/4

L 38083-65

ACCESSION NR: AT5003516

stress, and on the average is 20% of the overall relative deformations at the maximum stress. The Poisson bracket, which is determined by the ratio of the lateral deformations to the longitudinal deformations, for the graphite studied, is equal to approximately 0.2. After the maximum stresses, depending on the value of maximum stress, no increase is observed in the residual deformations in the graphite. After this, the values of the relative longitudinal deformations and the module of elasticity become reproducible and an elastic hysteresis loop is observed, i. e. the graphite behaves like an elastic body within stress limits which do not exceed the maximum stresses at the previous loading. Data are obtained on the relative time change, and consequently on the change in the rate of propagation of the ultrasonic signal as well as in the values of both the overall and residual deformations and in the module of elasticity as the compressive load is changed. These data may be used for calculating the strength of graphite articles and in developing methods for testing these articles without destroying them. It is proposed that a further study be made of the properties of graphite and of the deformation mechanism in the case of single-stage and repeated bending. It is also proposed that microhardness and x-ray analysis methods be used. Original material in English, 10 tables.

Card 3/4

L 38083-65
ACCESSION NR: AT5003516

ASSOCIATION: none

SUBMITTED: 20Dec63

ENCL: 00

SUB CODE: MT

NO REF SOV: 003

OTHER: 003

Card 4/4

LIVENTSEV, V.V., inzh.

Determination of the permeability parameters of a layer of coal
by the seepage of minute quantities of water. Izv. vys. ucheb.
zav.; gor. zhur. 6 no.9:88-94 '63. (MIRA 17:1)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki.
Rekomendovana kafedroy rudnichnoy i promyshlennoy aerologii i
tekhniki bezopasnosti.

BURCHAKOV, A.S., doktor tekhn. nauk; LIVENTSEV, V.V., gornyy inzh.

Experimental and analytical method of calculating parameters
of the wetting of a mine section. Ugol' 39 no.6:56-62 Je 1964
(MIRA 17:7)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki.

SAKHAROV, I.Ye.; LIVENTSEVA, I.F.

Injection of an electron beam into plasma in a strong magnetic field. Radiotekh. i elektron. 9 no.5:838-843 My '64.
(MIRA 17:7)

L 23907-65 EWT(1)/SWG(k)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/EEC(b)-2/EWA(1)-2
Pz-6/Po-4/Pab-10/Pi-4 IJP(c) AT

ACCESSION NR: AP4038643

S/0109/64/009/005/0838/0843

AUTHOR: Sakharov, I. Ye.; Liventseva, I. F.

TITLE: Introducing an electron beam into plasma located in a strong magnetic field

SOURCE: Radiotekhnika i elektronika, v. 9, no. 5, 1964, 838-843

TOPIC TAGS: electron beam, plasma, plasma amplifier, plasma shf oscillator, plasma proof electron beam

ABSTRACT: A new electron-beam source is described in which the beam is shielded from plasma penetration into the accelerating gap and from ion bombardment of the cathode. A sharp nonuniformity of an external magnetic field created by counter-connected coils is used for shielding. The device used in the experiments (see Fig. 1 of the Enclosure) consisted of a 50-mm-diameter, 500-mm-long, glass cylinder filled with He at 10^{-2} to $(1.2) \times 10^{-7}$ torr. Both the accelerating gap and the discharge gap were in the uniform-magnetic-field region. The anode-discharge-cathode distance was 120 mm. An electron-beam collector with an analyzer permitted evaluating the straggling of electrons in the beam. Stable operation was ob-

Card 1/3

L 23907-65

ACCESSION NR: AP4038643

served at pressures of up to 5×10^{-2} torr in He. The magnetic nonuniformity resulted in a reduction in the ion current (through the cathode) by 3 orders of magnitude. The energy straggling of electrons associated with longitudinal motion was 20% or less of the total energy involved. "The authors are deeply indebted to V.Ye. Golant for his constant help and discussing the results." Orig. art. has: 3 figures and 4 formulas.

ASSOCIATION: none

SUBMITTED: 05Jul62

ENCL: 01

SUB CODE: ME, NP

NO REF SOV: 002

OTHER: 002

Card 2/3

L 23907-65

ACCESSION NR: AP4038643

ENCLOSURE: 1

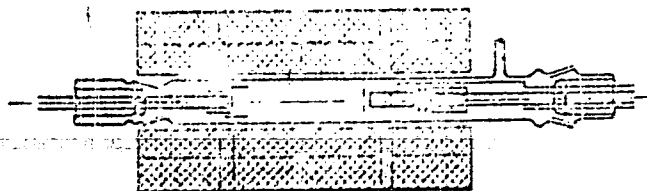


Fig. 1. Experimental device with magnetic coils

Right - an electron projector inserted through a ground-glass joint. Left - a discharge cathode; next to it, a beam collector.

Card 3/3

L 6313-66 EWT(1)/EWT(m)/EPF(c)/ETC/EPF(n)-2/EWS(m)/EPA(v)-2/EWP(t)/EWP(n) IJP(c)
 ACC NR: AP5028318 JD/GG/AT SOURCE CODE: UR/0057/65/035/011/2034/2041

AUTHOR: ^{44, 55}Golant, V.Ye.; ^{44, 55}Zhilinskiy, A.P.; ^{44, 55}Liventseva, I.F.; ^{44, 55}Sakharov, I.Ye.

ORG: ^{44, 55}Leningrad Polytechnic Institute im. M.I.Kalinin (Leningradskiy politekhnicheskiy institut) 89

TITLE: ^{21, 44, 55}Electromagnetic radiation from an electron beam traversing a plasma in a magnetic field

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 11, 1965, 2034-2041

TOPIC TAGS: ^{21, 44, 55}helium plasma, plasma beam interaction, plasma, plasma oscillation, plasma wave, cyclotron resonance, electron beam

ABSTRACT: The authors have investigated the microwave (3 cm wavelength) fields in and radiation from plasmas produced by 20 to 900 mA beams of 0.8 to 2 keV electrons traversing helium at pressures from 5×10^{-3} to 1×10^{-1} mm Hg in the presence of a 2kOe or weaker uniform longitudinal magnetic field. The plasmas were produced in a 5 cm diameter 40 cm long glass tube containing at one end an electron gun producing a 0.5 cm diameter beam. The electron gun was operated with 2 μ sec pulses at a repetition rate of 50/sec. The radial distribution of the longitudinal microwave electric field was determined with the aid of a uhf probe consisting of a section of twinlead with 4 mm spacing, and the radiated microwaves were received with an open ended wave-

Card 1/2

UDC: 533.9

L 0310-00

ACC NR: AP5028318

guide section located close to the discharge tube. The uhf signals were recorded with a superheterodyne receiver with a 2 Mc passband and a sensitivity of $5 \times 10^{-12} \text{w}$. One conductor of the uhf probe was employed also as a Langmuir probe to determine the plasma density. The discharge tube contained in the end opposite the electron gun an anode and a directly heated cathode, with the aid of which a gas discharge plasma could be produced. This plasma was employed to calibrate the Langmuir probe in the presence of the magnetic field and in some other auxiliary experiments. The plasma produced by the electron beam was found to extend far beyond the limits of the beam. The microwave field strength and radiation intensity were investigated as functions of the magnetic field strength, gas pressure, beam current, and electron energy, and the results are presented graphically and discussed. The intensity of the uhf radiation varied greatly with the conditions of operation, but such radiation was observed at magnetic field strengths an order of magnitude lower than that corresponding to the electron cyclotron resonance, and in some cases in the absence of a magnetic field. Further work will be required to elucidate the nature of the coupling between the longitudinal plasma oscillations and the transverse electromagnetic waves which makes the radiation possible. Orig. art. has: 9 figures. [15]

SUB CODE: ME, EM/ SUBM DATE: 18Feb65/ ORIG REF: 011/ OTH REF: 006/. ATD PRESS:

4143

BVK
Card 2/2

AL'BITSKAYA, O.N.; LIVENTSEVA, N.D.; SHAPOSHNIKOVA, N.A.; YAMANOV, S.A.

Investigating the resistance of dielectrics to moisture and fungi
in a moist tropical climate. Trudy VNI no.62:217-239 '58.
(Dielectrics) (MIRA 11:11)

LIVENTSEVA, YE.

Bee Culture

Determining the germination of the Phacelia seed. Pchelovodstvo 29 no. 3:42-44 Mr '52.

9. Monthly List of Russian Accessions, Library of Congress, July 195~~1~~² Uncl.

L 09974-67 EWT(m)

ACC NR: AP6035348

SOURCE CODE: UR/0243/66/000/010/0017/0024

AUTHOR: Livenson, A. R.

37

ORG: All-Union Scientific Research Institute of Medical Instrumentation
(Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo priborostroeniya)

TITLE: Determination of the coefficient of reflection for multilayered systems of biological tissues in the microwave range

SOURCE: Meditsinskaya promyshlennost' SSSR, no. 10, 1966, 17-24

TOPIC TAGS: ^{radiation} ~~microwave~~ biologic effect, radiation dosimetry, microwave ~~dosimetry~~

ABSTRACT: The author presents diagrams showing some results of his dosimetric survey using cattle and pig specimens. A diagram of the dosimeter is shown in Fig. 1.

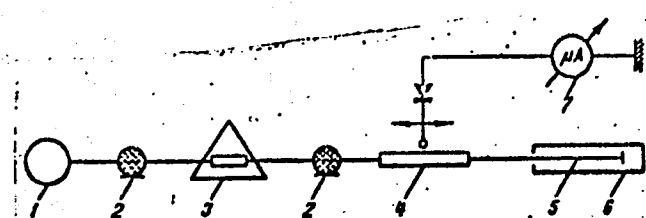


Fig. 1. Setup for measuring the coefficient of reflection for various biological tissues

- 1 - Generator; 2 - coaxial cables;
- 3 - attenuator; 4 - measuring line;
- 5, 6 - thermostatic specimen holder;
- 7 - microammeter.

Card 1/5

UDC: 615.36-011:535.312

L 09974-67

ACC NR: AP6035348

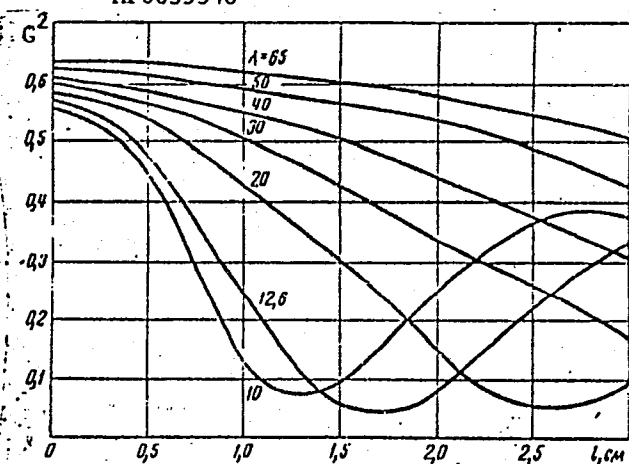


Fig. 2. Dependence of the coefficient of reflection, G^2 , (according to power) on the thickness of the fatty layer when a two-layer system of fat and muscle is used

1 - for wavelength λ - from 10—65 cm.

Table 1.

	$\lambda = 12.6 \text{ cm}$						$\lambda = 65 \text{ cm}$					
	Z_e	R	X	θ	λ_e		Z_e	R	X	θ	λ_e	
	ohm			rad	cm		ohm			rad	cm	
Muscle.....	52,5	52	8	0,155	1,7		44	41,5	14,7	0,34	8,1	
Skin.....	56,6	55,4	9,6	0,172	1,9		52,5	49,5	16,7	0,318	9,5	
Fat.....	186	181	22,3	0,122	6,4		170	163	44	0,264	30,5	

Table. 1. Calculated wave resistance and wave length parameters for some biological tissues

Card 2/5

L 09974-67
ACC NR: AP6035348

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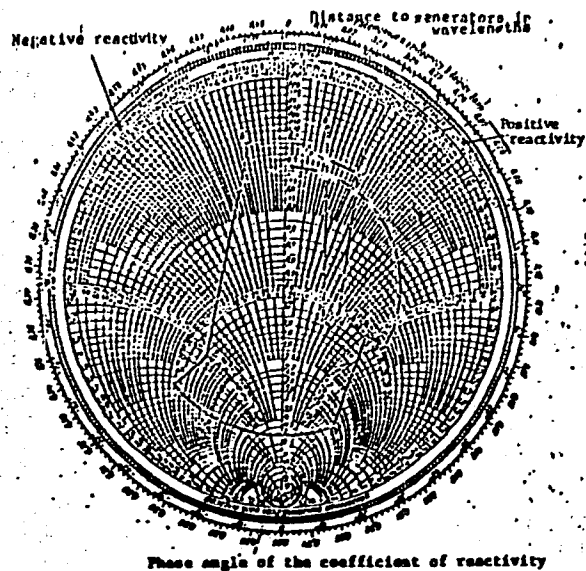


Fig. 3. Diagrammatic calculation (impedances) of the coefficient of reflection for a three-layer system of skin-fat-muscle when the fatty layer is 1 cm thick and the skin is 0.2 cm thick. 1—6 wavelength 65 cm; 1'—6' wavelength 12.6 cm

Card 3/5

L 09974-67

ACC NR: AP6035348



Fig. 4. Diagram of the disposition of tissue layers in a three-layer system

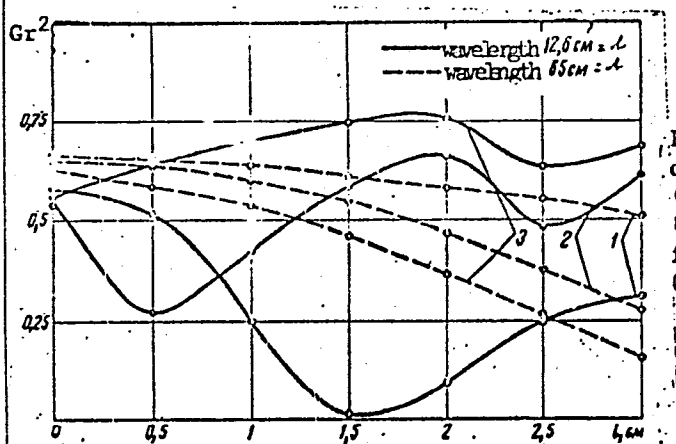


Fig. 5. Dependence of the coefficient of reflection for a three-layer system (skin-fat-muscle) on the thickness of the fatty layer when the skin is of the following thickness: 0.2 cm (1); 0.4 cm (2); no skin (3).

Card 4/5

L 09974-67
ACC NR: AP6035348

0

The following types of generators were used: GSS-12 (100—1000 Mc; GSS-15 (1000—2000 Mc); GSS-22 (2000—3000 Mc). Results of the dosimetric surveys are shown in the following figures. It was concluded that a comparison of experimental measurements with calculated data rendered the practical use of analytical and graphic analytical methods of calculation possible. The latter is more effective owing to its simplicity and visual quality. Approximately 50% of the microwave energy used in medical practice (460—2375 Mc) is reflected from the surface of the body. At a frequency of 460 Mc, this value fluctuates between 35 and 63% and at a frequency of 2375 Mc, between 25 and 76% depending on skin and fat thickness. A quarter-wave matching strip (Mycalex 1-cm thick) substantially increases the percentage of tissue-absorbed energy during 12-cm-range medical procedures. Orig. art. has: 5 figures.

SUB CODE: 06/ SUBM DATE: 06Apr66/ ORIG REF: 002/ OTH REF: 006/
ATD PRESS: 5105

Card 5/5 *670*

40565

S/020/62/146/002/006/013
B142/B186

3.5/10

AUTHORS: Liventsov, A. V., Markov, M. N., Merson, Ya. I., Shamilev, M. R.

TITLE: Experimental determination of outward terrestrial radiation

PERIODICAL: Akademiya nauk SSSR: Doklady, v. 146, no. 2, 1962, 344-346

TEXT: So far only mean values of terrestrial radiation could be calculated for the troposphere and stratosphere, and sometimes the data were unreliable. In view of this, the emissive terrestrial radiation was measured by means of high-altitude sounding rockets at altitudes from 100 to 500 km. A special infrared radiation-measuring device was used. It comprised an optical mirror system for focusing the thermal radiation emitted upward (spectrum range from 2.5 to 40 μ) onto a low-inertia bolometer, signal amplifiers, automatic recorders of the magnetic and galvanometric type, and radio-telemetering systems for monitoring the recorded data to Earth. The modulation principle was employed with a frequency of 80 c/sec. Operational difficulties through the spectrum band being close to the modulator band were overcome by differential modulation

Card 1/3

Experimental determination of ...

S/020/62/146/002/006/013
B142/B186

of heat flux radiation both from the Earth and from cosmic space used as control gauge. During 1958 - 1961 four tests were carried out over specific territorial sections of the central regions in the European part of the USSR at altitudes of 100 km (during the total solar eclipse on February 15, 1961), 200 km (two tests), and 470 km. Data from single territorial sections were obtained by scanning of the lower hemisphere in the optical system. Scanning angle was 180° , scanning intervals were 30 sec. Integral radiation within this wave range was recorded. Solar short-wave radiation was filtered out by frosting the mirrors or by dusting them with PbS. The spatial resolving power of the device was 0.5° . Before testing, the device was calibrated to radiator gauges and the sensitivity was automatically controlled by a special built-in gauge radiator over intervals of 30 sec. Q and T_{eff} were calculated according to Lambert's law as numerical values. They were compiled in a table together with comparative data from other authors. Differences in radiation flux due to meteorological factors were observed. Results:

Card 2/3

Experimental determination of ...

S/020/62/146/002/006/013
B142/B186

	Test 1	Test 2	Test 3	Test 4
$Q \text{ w/cm}^2$	$1.2 \cdot 10^{-2}$	$0.9 \cdot 10^{-2}$	$1.4 \cdot 10^{-2}$	$1.8 \cdot 10^{-2}$
$T_{\text{eff}}, K^{\circ}$	216	200	224	238
Conditions	no clouds	medium over- cast	medium over- cast	continuous overcast solar eclipse

Conclusion : it was possible to measure infrared terrestrial radiation over a broad spectrum range (40μ) in practice. At the same time a new method, has been developed which can be applied both to studies in geophysics and to terrestrial atmosphere research. The mechanical part of the radiation-measuring device was designed by V. Ye. Shervinskiy. There is 1 table.

PRESENTED: April 9, 1962, by A. A. Blagonravov, Academician
SUBMITTED: March 13, 1962
Card 3/3

AVER'YANOV, I.P.; KASATKIN, A.M.; LIVENTSOV, A.V.; MARKOV, M.N.;
MERSON, Ya.I.; SHAMILEV, M.R.; SHERVINSKIY, V.Ye.;

Measurement of the emerging heat radiation of the earth
from a high-altitude geophysical automatic station during
the total solar eclipse of February 15, 1961. Isk.sput.Zem.
no.14:49-56 '62. (MIRA 15:11)

(Heat--Radiation and absorption)

(Atmosphere, Upper--Rocket observations)

44832

S/560/62/000/014/003/011
A001/A101

3.5800

AUTHORS: Aver'yanov, I. P., Kasatkin, A. M., Liventsov, A. V., Markov, M. N.,
Merson, Ya. I., Shamilev, M. R., Shervinskiy, V. Ye.

TITLE: The measurement of Earth's thermal radiation into space during the
total eclipse of February 15, 1961, from an altitude geophysical
automatic station

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli. no. 14, 1962,
49 - 56

TEXT: To improve calculational methods of determining radiation of the
atmosphere at high altitudes, the study of optical properties of its upper
layers, using the measurements of its thermal radiation, is necessary. These
studies have been conducted in the USSR since 1958 by means of altitude geophys-
ical rockets. The article describes one of these experiments performed during
the total solar eclipse of February 15, 1961, in the middle part of the European
part of the USSR. The general scheme of the experiment is shown in Figure 1 and
the block-diagram of the device mounted on an altitude geophysical automatic.

Card 1/4

The measurement of Earth's thermal...

S/560/62/000/014/003/011
A001/A101

station (rocket) is shown in Figure 2. The rocket was lifted to an altitude of about 100 km. During the operation at high altitudes the device performed about 5 cycles of scanning, three of which were satisfactory and were used for processing. The recorder of radiation functions on the differential system of registration; the speed of scanning motion is 6° per one sec.; the threshold of bolometer sensitivity amounts to 10^{-9} w/cps at a frequency of 80 cps; the spectral sensitivity of the bolometers is uniform within the range from 1 to 40μ . The mean magnitude of the thermal flux, averaged for the total scanning angle, was determined to amount to 1.8×10^{-2} w.cm $^{-2}$. The experiment conducted, as well as the previous measurements of the Earth's thermal radiation, is the first attempt of this kind. There are 5 figures.

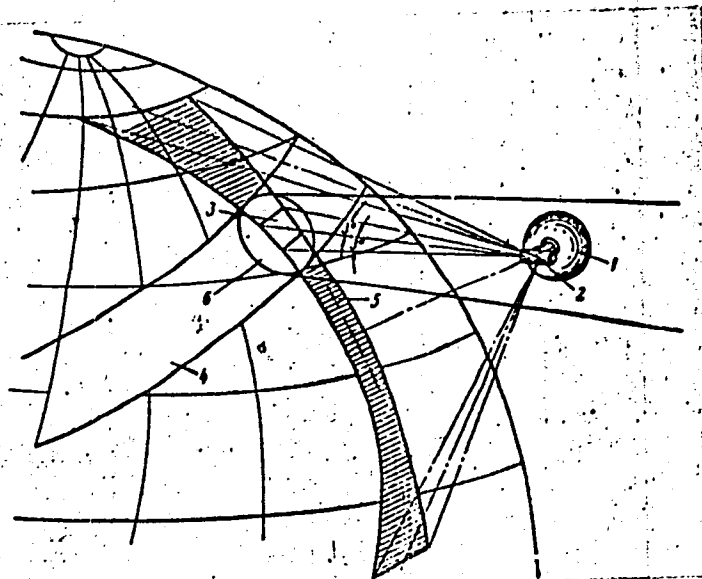
SUBMITTED: March 10, 1962

Card 2/4

The measurement of Earth's thermal...

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A001/A101

Figure 1. The scheme of an experiment
Legend; 1 - Altitude geo-physical automatic station;
2 - recorder of Earth's radiation; 3 - area on the Earth whose radiation is being measured; 4 - belt of total eclipse phase; 5 - band of scanning; 6 - lunar umbra.

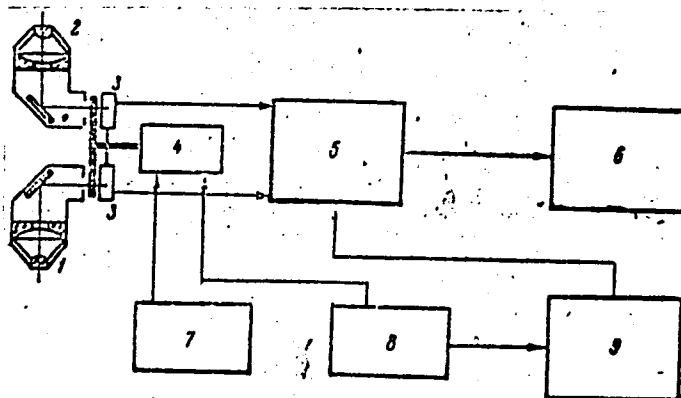


Card 3/4

The measurement of Earth's thermal...

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A001/A101

Figure 2. The block-diagram of a device for recording Earth's thermal radiation
Legend: 1 - scanning optical head; 2 - optical head of zero signal; 3 - bolometers; 4 - mechanism of scanning; 5 - amplifier; 6 - telemeasuring system; 7 - motor supply source; 8 - commanding device on board; 9 - supply source (autonomous).



Card 4/4

I. 45735-65 ENG(v)/EWT(1)/EEC(t)/FSS-2 Pe-5/Pa-4/Pae-2 GW/GS
 UR/0000/64/000/000/0051/0054
 ACCESSION NR: AT501155

AUTHOR: Liventsov, A. V.; Markov, M. N.; Merson, Ya. I.; Shamilev, M. R.

TITLE: Experimental determination of the outgoing radiation from the earth, and investigation of the thermal radiation from the earth into outer space during the time of the total solar eclipse, using high altitude geophysical rockets

SOURCE: Mezhvedomstvennoye soveshchaniye po aktinometrii i optike atmosfery. 5th, Moscow, 1963. Aktinometriya i optika atmosfery (Actinometry and atmospheric optics); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1964, 51-54

TOPIC TAGS: earth radiation, thermal radiation, geophysical rocket, high altitude rocket, solar eclipse, infrared radiation

ABSTRACT: The results reported were obtained since 1958 with geophysical rockets shot to altitudes of 100 - 450 km. The authors stress the results of one of the experiments carried out during the total solar eclipse of 15 February 1961 in the central belt of the European part of the Soviet Union. The radiation receiver was a bismuth bolometer. The null drift caused by instability of bolometer bridge and the

L 45735-65

ACCESSION NR: AT5011155

3

dc amplifier were eliminated by using a modulation scheme. The specifications of the equipment are briefly described. The first essential result obtained during the experiments was a direct measurement of the average values of the radiation outgoing from the earth, measured from outer space. The results indicate that the radiation flux from the earth varies smoothly with angle, and does not decrease abruptly toward the earth's rim. This indicates that the high layers of the upper atmosphere have a strong influence on the angular distribution. The considerable change in the energy flux during the total phase of the eclipse also offers evidence of the appreciable contribution from the upper layers, since the thermal conditions in the lower layers and in the ground could not change noticeably during the total eclipse. The results cannot be directly compared with those by others, in view of the different experimental conditions. The data obtained make it possible to estimate the screening effect of the moon on the daytime thermal radiation of the earth's atmosphere and lead to the conclusion that although the theoretical values of the outgoing flux are in sufficiently good agreement with the experiment, the theoretical angular distribution needs considerable modification. "I. P. Aver'yanov, A. M. Kasatkina, and V. Ye. Shervinskiy participated in the experiment during the eclipse and in the development of the corresponding apparatus." Orig. art. has: 3 figures and 1 table. [02]

Card 2/3

L 45735-65

ACCESSION NR: AT5011155

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva AN SSSR, Moscow (Physics
Institute AN SSSR)

SUBMITTED: 25 Nov 64

ENCL: 00

SUB CODE: AA, ES

NR REF SOV: 000

OTHER: 000

ATD PRESS: 4001

Card

3/3

L 45154-66 FSS-2/EWT(1) GW
ACC NR: AP6028339

SOURCE CODE: UR/0293/66/004/004/0592/0600

AUTHORS: Liventsov, A. V.; Markov, M. N.; Merson, Ya. I.; Shamilev, M. R. 60
51
B

ORG: none

TITLE: Investigation of the angular distribution of the earth's [✓]thermal radiation in outer space during the launching of a geophysical rocket on 27 August 1958 [✓]

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 4, 1966, 592-600

TOPIC TAGS: thermal radiation, infrared radiation, geophysic rocket, earth atmosphere, geophysic experiment, radiation measurement

ABSTRACT: The experimental apparatus and the recorded data of a geophysical experiment conducted on a rocket, launched on 27 August 1958, are discussed. In part I of the report, the instrument is described that was used in measuring the angular distribution of the earth's IR-radiation. The various components and electrical circuitry of the radiometer are described in great detail. The two halves of the optical ends of the instrument were placed end-to-end on a small rotor to scan simultaneously in the vertical the earth's atmosphere and outer space. The instrument was calibrated using a low temperature radiation source. The rocket flew to an altitude of 450 km during which time a total of 50 scanning cycles was completed. In part II, the recorded results are given in graphical form as radiation intensity versus angular distribution and altitude curves, observed along a horizontal direction.

Card 1/2

UDC: 551.521.32

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ACC NR: AP6028339

7
The results show characteristics of nonisothermal radiation in the earth's atmosphere and several maxima in the IR-radiation at various altitudes. The following persons participated actively in the work: V. M. Yermakova, V. P. Glazunov, V. A. Zinov'yev, and S. S. Dudukin. The mechanical developments were the work of V. Ye. Shervinskiy, and the magnetic recordings were performed by A. F. Polyanskiy. The authors express their thanks to G. G. Boldyrev, A. M. Petryakhin, and K. A. Razin for their constant interest and influence on the work. Orig. art. has: 9 figures. [04]

SUB CODE: 04/ SUBM DATE: 15Mar65/ ORIG REF: 006/ ATD PRESS: 5081

Card 2/2 *Amn*

~~LIVENTSON, I. I.~~

Experiment illustrating plant respiration. Biol. v shkole no. 3:88-
89 My-Je '58. (MIRA 11:8)

1. Gorno-Altayskiy pedagogicheskiy institut.
(Botany--Study and teaching)
(Plants--Respiration)